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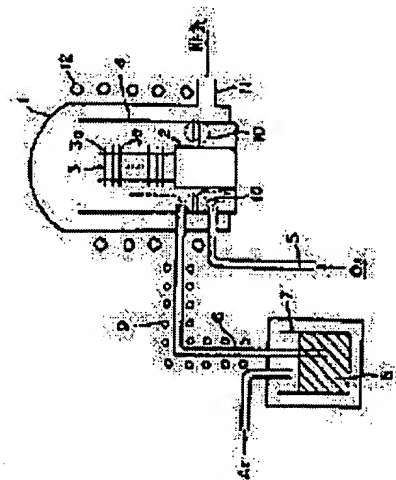
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(54) MANUFACTURE OF SEMICONDUCTOR ELEMENT AND THERMAL CVD DEVICE

(57)Abstract:

PURPOSE: To enable a high-quality Ta<sub>2</sub>O<sub>5</sub> film to be formed by reducing an amount of C within a CVD-Ta<sub>2</sub>O<sub>5</sub> film by using an O<sub>3</sub> gas as a species for oxidizing of Ta(OC<sub>2</sub>H<sub>5</sub>)<sub>5</sub>.

CONSTITUTION: A wafer 3 is placed on a boat 3a and it is placed on a temperature-preserving cylinder 2, an outer tube 1 and an inner tube 4 are heated by a heater 12, and an intake tube 6 is heated by a heater 9. O<sub>3</sub> gas is taken into the inner tube 4 within a furnace through a intake tube 5 and is filled into a container 7. Ta(OC<sub>2</sub>H<sub>5</sub>)<sub>5</sub> 8 is introduced into the inner tube 4 through the intake tube 6 with Ar as a carrier gas. The Ta(OC<sub>2</sub>H<sub>5</sub>)<sub>5</sub>/O<sub>3</sub> mixed gas which is introduced into the inner tube 4 is reacted with O<sub>3</sub> gas as an oxidation activation seed, thus forming Ta<sub>2</sub>O<sub>5</sub> film on the wafer 3. Thus, since O<sub>3</sub> which is more active than O<sub>2</sub> is utilized as an active species for oxidizing Ta(OC<sub>2</sub>H<sub>5</sub>)<sub>5</sub>, the amount of C contained within CVD-Ta<sub>2</sub>O<sub>5</sub> film to be formed can be reduced and leak current can be restricted, thus enabling electrical characteristics to be improved.



## LEGAL STATUS

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